Executive Summary

EVALUATION:	Office of Oversight Focused Review
SITE:	Savannah River Site
DATES:	July-August 1999

Scope

The U.S. Department of Energy (DOE) Office of Oversight, within the Office of Environment, Safety and Health, performed a focused safety management review at the Savannah River Site (SRS). During the review, the Office of Oversight examined work planning and control processes being applied to operational, maintenance, and construction activities at F-Canyon and at facilities involved in tritium activities, specifically 232-H, 233-H, and 234-H. The work planning and control processes were evaluated against the five core functions of integrated safety management (ISM). Line management's implementation of ISM was also examined. The facilities selected enabled the Office of Oversight to evaluate differing missions, functions, and life cycle stages. This focused review is a follow-up to the January 1996 safety management evaluation conducted by the Office of Oversight.

Results

SRS has a sustained record of establishing and implementing effective safety management systems and programs. Essential to this is the DOE Savannah River Operations Office's (SR) and the Westinghouse Savannah River Company's (WSRC) commitment to the ISM principles. As a result of these systems, programs, and level of commitment, the site has demonstrated effective performance in planning, controlling, and executing work. The site is also a recognized leader in developing initiatives to improve ISM within the Department.

SR has provided clear direction and expectations for ISM implementation to WSRC. WSRC has embraced these expectations through the development of an ISM strategic plan that serves as the framework for maintaining and enhancing ISM implementation. Senior WSRC management effectively monitors progress and provides direction for ISM implementation through an ISM Steering Committee.

SR has conducted sufficient oversight of WSRC programs and activities to evaluate progress in achieving DOE expectations in most areas. Accordingly, WSRC has developed effective management systems and safety programs. WSRC self-assessment programs are mature and support continuous improvement. These initiatives are complimented by strong sitewide corrective action and lessons-learned programs that facilitate timely resolution of issues and enable SRS to learn from the deficiencies at other sites.

This strong foundation and commitment established by the DOE and contractor line organization has been translated into effective and consistent work planning and control processes at F-Canyon and at the tritium facilities. At SRS, management systems and processes have been established to ensure that work is appropriately planned. At both F-Canyon and the tritium facilities, formal schedules, Plan-of-the-Day meetings, and work coordination meetings are used to effectively identify, prioritize, and coordinate planned and emerging work. Work planning activities usually involve line management; environment, safety, and health (ES&H); maintenance; and other appropriate support personnel. Pre-job "walkdowns" of job locations are comprehensive and ensure readiness to perform work.

Although weaknesses were identified in WSRC hazard analysis processes, SRS workers are competent and are involved in identifying work activity hazards. Workers are active participants in hazard screenings, job hazard

analyses, and facility radiological assessment teams. At the facility level, the site demonstrates a thorough hazard assessment program through such mechanisms as basis for interim operation (BIO) and unreviewed safety question determinations. Safety analyses for complex tasks are generally comprehensive. Processes for effective hazard controls are demonstrated through a strong commitment to maintaining facility conditions and an overall safety awareness and discipline. Confirmation of readiness is performed for all work; operational, maintenance, and construction activities are conducted effectively and safely.

WSRC effectively measures safety management performance through a structured and integrated program of self-assessments, internal independent assessments, performance measures, and other feedback systems. WSRC identifies, captures, and tracks to completion ES&H performance deficiencies and evaluates corrective action implementation. WSRC has a strong program for identifying deficiencies within and outside SRS that have applicability to site activities and communicating these lessons to the appropriate organizational entity.

While SR has developed a set of programs to evaluate WSRC progress in achieving DOE expectations, some of these programs are not fully effective in supporting rigorous line oversight of WSRC. For example, a consolidated database of significant issues is not available to SR to allow tracking and trending of sitewide performance. This limitation challenges SR to provide appropriate and timely line oversight and management direction to WSRC for resolution of these issues. In addition, some lack of discipline was noted in the conduct of SR management walk-throughs, technical assessments, and self-assessments.

At an institutional level, the mission date for nuclear material stabilization and storage (NMS&S) activities has been extended beyond 2006 without re-evaluating the need to update the BIO to a safety analysis report (SAR) compliant with DOE Order 5480.23. Notwithstanding recent improvements in hazards analysis processes, there is a lack of integration among such processes used at the site. The hazard analysis process for procedure development and resolution is not well documented and does not always involve participation of subject matter experts.

Weaknesses in the hazard analysis process can result in inconsistent application of controls for identified hazards. There was evidence that some hazard controls to maintain worker safety were established without involvement or approval of industrial hygiene and safety personnel. There is no requirement for professional-level radiological engineering support to review or participate in radiological work permit planning or in as low as reasonably achievable (ALARA) reviews. Among the projects and work activities reviewed, there were deficiencies in verifying that worker training requirements were current and sufficient to perform the assigned activity safely.

Most SRS work is performed safely; however, some activities were not being conducted in accordance with procedures. Procedure non-compliance has been a historical and continuing concern at SRS as evidenced by a number of documented event reports. The line organization has placed priority on resolving this weakness. While workers typically follow procedures for work execution, operational and maintenance events continue to indicate that deficiencies in adherence to procedures and work practices persist.

Conclusions

SRS has implemented an effective integrated safety management system (ISMS), resulting in improved work processes and sustained safety performance. The mature safety management programs and line management commitment to ISM implementation have been translated into consistent performance of work planning and control processes at the facility, operational, and activity level. Personnel at the facilities evaluated function as cohesive teams in executing operational, maintenance, and construction tasks. Planning and scheduling of work activities, performing work consistent with hazard controls, and incorporating lessons into improved performance are strengths at SRS.

SR and WSRC management are aware of the challenges to continued ISM improvements and are taking appropriate steps to address most of these. Efforts are needed to enhance the rigor and effectiveness of SR line oversight processes; the integration of hazard analysis processes; and the involvement of industrial hygiene, industrial safety, and radiological engineering personnel in work planning and control activities. Continued management vigilance should ensure adherence to implemented safety programs and procedures and further improve overall ISM implementation at the site.

OVERVIEW OF ISSUES

1. The implementation of SR contractor oversight programs is not fully effective and lacks systematic application. Deficiencies were identified in implementation of the technical assessment program, inadequate documentation of management walk-throughs, and inadequate self-assessments of the SR line oversight program.

2. The mission date of stabilization activities has been extended past 2006 without re-evaluating the need to upgrade NMS&S BIOs to DOE Order 5480.23 SARs. Approval of the current NMS&S BIOs was based on the mission ending in 2002.

3. Multiple deficiencies were identified in the implementation of WSRC hazard analysis processes. Examples include: deficiencies in industrial hygiene/industrial safety training, staffing, involvement in work activities, and procedure reviews; weaknesses in radiological engineering support for the work activities and in pre- and post-job ALARA reviews; and a lack of integration and linkage between various hazard analysis elements (e.g., work clearance permits, job hazard analyses, preliminary hazard analyses, and safety plans).